TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00001EK
Revision No:
2

This is to certify:

That the Peripheral Equipment

with type designation(s)
Intrinsically safe remote -I/O system excom ®

Issued to
Hans Turck GmbH & Co. KG
Mülheim an der Ruhr, Nordrhein-Westfalen, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	**B**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**Required protection according to the Rules shall be provided upon installation on board.**

Issued at **Hamburg** on **2019-08-22**

This Certificate is valid until **2024-08-21**.
DNV GL local station: **Essen**

Approval Engineer: **Heinz Scheffler**

for **DNV GL**
Digitally Signed By:
Papanuskas, Joannis

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-026225-2**
Certificate No: **TAA00001EK**
Revision No: **2**

Product description

excom ® remote I/O-system for PROFIBUS-DP for the use in explosion hazardous areas
The system is equipped with bus-compatible, decentralized I/O-modules with protection class IP20 for the connection of binary and analog intrinsically safe field devices.
The system consists of power supply units or power supply modules, gateways, I/O-modules, as well as module racks to accommodate all components.
A module rack can accommodate a maximum of 16 modules, 2 gateways and 2 power supply modules.

Rated voltage: 24 VDC / 115VAC / 230 VAC

excom ® AC/DC Power Converter	PPSA230EX, PPSA115EX MT-PPS (subrack for PPSA)
Gateway for Profibus-DP communication	GDP-IS
PROFIBUS-DP segment coupler (RS485-IS)	SC12EX
PROFIBUS-DP optocoupler for zone 1	OC11Ex/2G.2
PROFIBUS-DP optocoupler for zone 2	OC11Ex/3G.2
module rack, zone 1, for 16 Modules, marine ship approved	MT16-2G/MSA
power supply module, 24 VDC, zone 1	PSD24EX
I/O module, digital, 8-channel	DM80EX
input module, digital, 4-channel	DI40EX
output module, digital, 4-channel	DO401EX
input module, analog, 4-channel	AI401Ex
output module, analog, 4-channel	AO401Ex
potentiometer module, analog, 4-channel	AI43Ex
input module, analog, active, 4-channel, HART®	AIH40EX
input module, analog, passive, 4-channel, HART®	AIH41EX
output module, analog, 4-channel, HART®	AOH40EX
input module, temperature, 4-channel	TI40Ex
input module, temperature, 4-channel	TI41Ex
frequency module, 2-channel	DF20EX
dummy modules for empty slots	BM1
power supply cover (MT18)	BM-PS

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL Rules for Ships/Offshore Standards Pt.4 Ch.9 Control and Monitoring Systems.

Components to be mounted inside metallic enclosure -each Ex certified / marine certified enclosure can be used.

Ex installations to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Ex-protection according to EC-type examination certificate's:

Ident No.	Description	Type	Ex-certificate
6884047	Profibus-DP segment coupler (RS485-IS)	SC12Ex	PTB 03 ATEX 2115
6890427	Profibus-DP fibre-optic coupler (RS485-IS) zone-1 device	OC11Ex/2G.2	PTB 05 ATEX 2051X
6890428	Profibus-DP fibre-optic coupler (RS485) zone-2 device	OC11Ex/3G.2	PTB 05 ATEX 2052X
9100688	module rack for 16 modules marine ship approved	MT16-2G/MSA	PTB 00 ATEX 2194U
6881721	24 VDC power supply module	PSD24Ex	PTB 00 ATEX 2193
6884210	gateway for Profibus-DP communication (Firmware 2.2)	GDP-IS	PTB 09 ATEX 2013
6884275	gateway for Profibus-DP communication (Firmware 2.3)	GDP-IS	PTB 09 ATEX 2013
6884006	8-channel digital input/output module	DM80Ex	PTB 00 ATEX 2178
6884004	4-channel digital input module	DI40Ex	PTB 02 ATEX 2032
6884203	4-channel digital output module	DO401Ex	PTB 10 ATEX 2024
6884204	4-channel analog input module active / passive	AI401Ex	PTB 03 ATEX 2217
6884205	4-channel analog output module	AO401Ex	PTB 00 ATEX 2179
6884137	4-channel potentiometer module	AI43Ex	PTB 06 ATEX 2026
6884001	4-channel analog input module, active HART®	AIH40Ex	PTB 00 ATEX 2059X
6884005	4-channel analog input module, passive HART®	AIH41Ex	PTB 00 ATEX 2059X
6884003	4-channel analog output module HART®	AOH40Ex	PTB 02 ATEX 2051
6884000	4-channel temperature input module (RTD/TC)	TI40Ex	PTB 00 ATEX 2181
6884190	4-channel temperature input module (only PT100)	TI41Ex	PTB 13 ATEX 2014
6884061	2-channel frequency module	DF20Ex	PTB 00 ATEX 2178
6884036	dummy module for unused slots	BM1	
6884044	cover for unused power supply slots	BM-PS	
6900293	AC/DC converter, 230 VAC	PPSA230EX	PTB 04 ATEX 2047X
6900294	AC/DC converter, 115 VAC	PPSA115EX	PTB 04 ATEX 2047X
9100516	subrack for up to 2 AC/DC converters	MT-PPS	PTB 16 ATEX 2025U

Type Approval documentation

Test reports: LOTR-DNVGL_TAA00001EK_20170926_Rev01, dated 26-09-2017
Technical Documentation: LOTD-DNVGL_TAA00001EK_20170926_Rev01, dated 26-09-2017

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE